AUSTRALIAN STEEL INSTITUTE

2025 revision of AS/NZS 3500.3 – what you need to know

Background

AS/NZS 3500.3 *Plumbing and drainage – Stormwater drainage* is referenced in the National Construction Code (NCC) as Deemed-to-Satisfy (DTS) solution for roof drainage on buildings and many other aspects of plumbing work.

Standards Australia published a revised edition of AS/NZS 3500.3:2025 on 17 April 2025. It is anticipated that the 2025 edition will be referenced in NCC 2025 and be effective when each jurisdiction implements the new NCC.

This revision came about as a result of a project initiated and funded by ASI roll forming members (BlueScope Building Components, Metroll, Steeline, Stramit and Stratco) who saw a need to more clearly define the requirements in the Standard for eaves gutter overflow and valley gutter design.

Specifically, the project focussed on the following areas:

- *Eaves gutter overflow design*: The 2021 Standard contained some prescriptive requirements for the provision of eaves gutter overflow measures but no clear design procedure or capacity information for overflow devices.
- *Valley gutter design*: The 2021 Standard contained prescriptive valley gutter design requirements, with all valley catchment areas assumed to be 20 square metres. Smaller catchments could not benefit from narrower valley gutters and larger catchments were not permitted even in regions of low rainfall intensity.

These identified 'problem areas' caused practical issues for manufacturers, designers and installers. Some eaves and valley gutter installations with adequate performance properties could be deemed non-conforming with no DTS design solution available. The valuable research work on back gap overflow capacity funded by ASI roll forming members had no design support in the Standard and therefore no simple, low-cost compliance path for practical use.

Revised requirements

The Standards revision project resulted in several specific changes in the 2025 edition of which Standard users should be aware:

- A new subclause 3.5.2 *Design procedure – overflow measures* has been added to Section 3.5 *Eaves gutter systems*. The procedure explains the criteria for overflow design, how overflow measures must be calculated and

situations where overflow measures are not required for eaves gutters. Appendix F is referenced for the design of overflow measures, including device capacity.

- Appendix F is now normative, meaning its provisions are not merely guidance but are binding on overflow designers. Previously this Appendix was just informative, causing inconsistent interpretation in some regions and by some practitioners and certifiers.
- Appendix F now has, for the first time, a specific design method for eaves gutter overflow. A table of back gap capacities, a formula for the capacity of slotted gutters and a single capacity figure for front bead overflow are available to the designer when preparing DTS solutions.
- Appendix F no longer contains the *table of minimum hf values* and *figures of acceptable solutions*. Reference to specifically located overflows, e.g. holes and weirs has also been removed. This was not a particularly useful inclusion in the Appendix as there were no calculation rules or device specifications.
- Appendix F has a new subclause F4.5 *Design by computational methods*. Although consisting entirely of an informative note, this subclause is a stepping stone to the inclusion of Computational Fluid Dynamics (CFD) as a design method in future editions of the Standard.
- Section 3.6 *Valley gutters* now contains a graph option for determining the minimum width of a valley gutter when the catchment exceeds 20 square metres with low rainfall intensity or is less than 20 square metres with high rainfall intensity. The current solution table based on a maximum catchment area of 20 square metres has been retained. Note that Figure 3.6.2 in the published Standard contains an editing error that reverses the square metre units on the X-axis. Steps are under way to have the figure updated to avoid incorrect design when the graph option is used.

Implications for manufacturers, designers and installers

Roof drainage system designers have always needed to design eaves gutter and downpipe solutions for *normal flow*, to suit the site and roof geometry. Typically this work is supported by technical manuals prepared by manufacturers supplying products and capacity information to installers.

The revisions to AS/NZS 3500.3 now make it possible to design eaves gutter *overflow solutions* on a rational and quantitative basis, rather than applying prescribed devices that may not be a good fit with modern components. For the first time, manufacturers can use the normative design rules to prepare overflow capacity information for back gaps and slotted gutters as DTS solutions, allowing designers and installers to confidently satisfy their customers and certifiers without resorting to a Performance Solution.

The revised provisions for valley gutters will allow greater solution flexibility and easier compliance. Valley gutters may now be selected where the catchment exceeds 20 square metres. For catchments smaller than 20 square metres, narrower valley gutters may now be selected where maximum rainfall intensity permits.

For every building project, someone is responsible for the design of the roof drainage system. That responsibility incudes overflow design, and with the 2025 edition of the Standard designers now have better rules to follow to determine overflow volumes and device capacities. Installers should expect that any design they are asked to install has been appropriately designed using all relevant provisions of the Standard.

Implementation

The implementation of building and plumbing standards is a state and territory responsibility. The Victorian Building Authority (VBA) has announced that from 20 October 2025, all plumbing work in Victoria must comply with the new editions of AS/NZS 3500 Parts 1, 2, 3 and 4. Implementation dates in other jurisdictions are not yet known.